Food and Agriculture Organization of the United Nations

FISHERIES OECMs

Report of the

Workshop on what positive biodiversity outcomes can be expected from other effective area-based conservation measures in fisheries: participatory refinement of FAO's draft framework

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Preparation of this document

This document provides a summary of the discussions, presentations and takeaway messages from a workshop dedicated to the participatory refinement of an area-based management tools (ABMTs) biodiversity outcomes framework for marine fisheries. Currently in development, the draft framework specifically concerns “other effective area-based conservation measures” (OECMs).

The workshop was held as a side event at the Fifth International Marine Protected Area Congress in Vancouver, Canada, on 6 February 2023. The meeting focused on gathering inputs from participating experts to refine FAO’s draft framework to provide guidance on operationalizing Criterion C of the Convention on Biological Diversity’s (CBD) OECM criteria, which focuses on achieving biodiversity outcomes.

This report was prepared by Sarah Davidson, Amber Himes-Cornell, Kristin Hoelting, Lucy Bowser and Xavier Nelson-Rowntree. The views expressed in this report are those of the participants and do not necessarily reflect the participants’ affiliated institutions.

Abstract

The Food and Agriculture Organization of the United Nations (FAO) organized and facilitated a workshop to provide input on a draft framework to identify the positive biodiversity outcomes linked to "other effective area-based conservation measures" (OECMs) in marine fisheries. The workshop was held as a side event at the Fifth International Marine Protected Area Congress (IMPAC5) in Vancouver, Canada, on 6 February 2023. The principle objective of the workshop was to elicit expert feedback to refine the draft framework. The framework is being developed as supplementary guidance on OECMs in the context of fisheries, building on FAO's publication of *A handbook for identifying, evaluating and reporting other effective area-based conservation measures in marine fisheries* in December 2022. The draft framework is intended to support the operationalization of Criterion C, one of the four criteria outlined by the Parties to the Convention on Biological Diversity (CBD) for recognition of an area-based management measure as an OECM. Criterion C is related to the identification of positive *in situ* biodiversity outcomes resulting from ongoing area-based management.

After introductory presentations, the workshop was conducted in a 'world café' style, in which participants rotated between five tables focusing on distinct discussion topics, followed by a plenary discussion. The table topics were: a strengths and weakness analysis of the draft framework overall; a discussion on incorporating diverse knowledge types; and three tables centring on different scales of biodiversity (i.e. ecosystem, community and species).

Participants concluded that confusions around operationalizing OECM Criterion C, and thus identifying fisheries-based OECMs, arise from both conceptual and practical issues. For example, the capacity – timeline, funding, manpower – to collect enough data or knowledge to justify a biodiversity outcome can greatly impact whether an OECM is identified or not. Moreover, a standardized method for reconciling different types of knowledge (e.g. scientific, Indigenous, lay) that can be used to identify an OECM has not been agreed upon.

Encouragingly, participants agreed that the proposed framework supports the clear and transparent identification of biodiversity outcomes, and that such a process will be instrumental in alleviating some of the practical problems in OECM identification (e.g. addressing differences in capacity, reconciling different types of knowledge, etc.). Additional takeaway messages from the workshop included: the need to identify who is responsible for gathering the information to evidence a biodiversity outcome at a potential OECM site; the need to incorporate diverse forms of knowledge when evidencing a biodiversity outcome; the need for context specificity when assessing biodiversity outcomes related to a fisheries area-based management tool; and finally the understanding that while some countries may have lower capacities than others for evidencing a biodiversity outcome at an OECM site, there must be a minimum standard for fulfilling OECM Criterion C.

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Abbreviations and acronyms

ABMT	area-based management tool
CBD	Convention of Biological Diversity
COFI	Committee on Fisheries
COP	Conference of Parties
CPUE	catch per unit of effort
EBV	essential biodiversity variables
EOV	essential ocean variables
FAO	Food and Agriculture Organization of the United Nations
GEO BON	Group on Earth Observation, Biodiversity Observation Network
GOOS	Global Ocean Observing System
IMPAC5	Fifth International Marine Protected Area Congress
IOC	Intergovernmental Oceanographic Commission
IPLC	Indigenous Peoples and local communities
IUCN	International Union for the Conservation of Nature
MPA	marine protected area
NFI	Fisheries and Aquaculture Division of the Food and Agriculture Organization of the United Nations
NGO	non-governmental organization
OECMs	other effective area-based management measures
RFMO	regional fisheries management organization
SDG	Sustainable Development Goals
SWOT	strengths, weaknesses, opportunities and threats
UNESCO	United Nations Educational, Scientific and Cultural Organization
WD-OECM	World Database on Other Effective Area-Based Conservation Measures

Introduction

The area-based conservation of marine resources is a key aspect of many conservation-focused strategies and actions. The Parties to the Convention on Biological Diversity (CBD) officially recognized the role of area-based management in biodiversity conservation through the adoption of Aichi Biodiversity Target 11 (henceforth referred to as Target 11) in 2010 (CBD, 2010). Target 11 specifically captured the role of area-based conservation in marine biodiversity and called for 10 percent of coastal and marine areas to be conserved under protected areas and other effective area-based conservation measures (OECMs) by 2020 (CBD, 2010). The United Nations General Assembly reinforced this in the 2030 Sustainable Development Agenda through the adoption of Sustainable Development Goal 14.5, which includes a similar target of preserving 10 percent of coastal and marine areas by 2030.

Recently, a lot of attention has focused on OECMs. The concept allows for a variety of sustainable use sectors to contribute to meeting global biodiversity targets through their own area-based management initiatives, thus helping countries meet their area-based conservation commitments. A definition, suite of criteria and guiding principles for OECMs were formally adopted at the Fourteenth Conference of Parties (COP) to the CBD in November 2018. Decision (14/8) defines OECMs by the outcomes produced by the area:

> A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the *in situ* conservation of biodiversity, with associated ecosystem functions and services and, where applicable, cultural, spiritual, socioeconomic, and other locally relevant values (CBD/COP/DEC/14/8) (CBD, 2018).

There are four criteria to identify OECMs, which streamlines their formal definition into key concepts. The criteria are listed as follows:

A. area is not currently recognized as a protected area;

B. area is governed and managed;

C. achieves sustained and effective contribution to *in situ* conservation of biodiversity; and,

D. associated ecosystem functions and services and cultural, spiritual, socioeconomic and other locally relevant values [are supported] (CBD, 2018) (see Annex C for full OECM criteria and subcriteria).

In December 2022, new targets were adopted by the Parties to the CBD, updating the global biodiversity framework. Target 3 of the Kunming-Montreal Global Biodiversity Framework (henceforth referred to as Target 3) explicitly notes the role of OECMs in achieving global biodiversity and sustainability goals (CBD, 2022):

> Ensure and enable that by 2030 at least 30 per cent of terrestrial, inland water, and of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem functions and services, are effectively conserved and managed through ecologically representative, well-connected and equitably governed systems of protected areas and other effective area-based conservation measures, recognizing indigenous and traditional territories, where applicable, and integrated into wider landscapes, seascapes and the ocean, while ensuring that any sustainable use, where appropriate in such areas, is fully consistent with conservation outcomes, recognizing and respecting the rights of indigenous peoples and local communities including over their traditional territories (CBD/COP/15/L25).

The OECM concept represents a new opportunity for states to recognize the potential for biodiversity conservation from a wider range of spatial management measures than ever before. Various international efforts have endeavoured to define, operationalize and provide guidance on OECMs across multiple sectors. Within fisheries specifically, many area-based management tools (ABMTs) already aim to meet sustainability goals and are well poised to meet the OECM criteria. Such measures are widely included in fisheries management plans and processes. Furthermore, the recognition of OECMs provides states with an incentive to coordinate spatial

management efforts across fisheries, with ABMTs being used in other relevant sectors that take place within their exclusive economic zones. These formally established, spatially defined fishery management measures can be integrated across competing sectors to reduce conflicts and help stakeholders achieve a balance between competing uses of the marine environment.

Recognizing OECMs can also facilitate the involvement of people from many sustainable use sectors in biodiversity conservation, as well as from many other communities. In particular, the OECM concept allows for a variety of sustainable use sectors to contribute to meeting global biodiversity targets through their own area-based management initiatives. This can generate three significant steps towards achieving biodiversity conservation:

1) mainstreaming biodiversity conservation objectives in the management of natural resource use;

2) ensuring that the objectives of sustainable use sectors are included in biodiversity conservation discussions and decisions; and

3) improving cross-sectoral dialogue and coordination by having to coordinate across sustainable use/natural resources sectors and environment agencies, as well as any other sector involved (e.g. public transports, forestry, energy, planning).

Recognizing OECMs also makes conservation a multisectoral effort and explicitly acknowledges the needs of people (e.g. food security, income generation, livelihoods, and cultural values).

In a fisheries context, OECMs are established, spatially defined management and/or conservation measures *other than* protected areas. They produce positive, long-term and *in situ* biodiversity outcomes, in addition to the intended fishery outcomes (FAO, 2022a). For the purposes of this report, these sector-specific OECMs are referred to as "Fisheries OECMs."

Although an official definition and criteria for OECMs now exist (CBD/COP/DEC/14/8), many countries have struggled with how to interpret and apply the OECM concept in order to meet, firstly, their Target 11 commitment – and now Target 3, which calls for 30 percent of marine and coastal environments to be conserved in marine protected areas (MPAs) or OECMs. If countries are going to be successful at meeting this new target, reporting a combination of both MPAs and OECMs in fisheries and other sectors will be necessary.

Many countries are now in need of guidance on how to interpret and apply the OECM official definition and meet the criteria, including in the fisheries and aquaculture sectors. Such guidance will enable them to use both MPAs and OECMs to meet Target 3. This is particularly vital for countries that do not already have the capacity to identify and assess potential OECMs for the purposes of CBD reporting.

The Parties to the CBD welcomed scientific and technical advice on OECMs in the form of guidance on identifying existing areas where management measures contributed to *in situ* biodiversity conservation in Decision 14/8. The same Decision 14/8 also specifically invited the Food and Agriculture Organization of the United Nations (FAO) to continue to assist parties in identifying OECMs through the provision of scientific and technical advice (CBD, 2018).

In 2021, at the Thirty-fourth meeting of the FAO Committee on Fisheries (COFI), FAO was invited to produce and disseminate practical guidance on fisheries-based OECMs (FAO, 2022b, para. 17d and 17e). In response, FAO's Fisheries and Aquaculture Division (NFI) published *A handbook for identifying, evaluating and reporting other effective area-based conservations measures in marine fisheries* (FAO, 2022a). In addition, FAO has held several capacity-building workshops – in the Baltic, Mediterranean, Caribbean and Latin America regions, as well as in Argentina and Jamaica. These workshops helped countries better understand the OECM identification process and consider potential Fisheries OECMs within their borders, using case studies to illustrate operationalization of the OECM criteria.

These workshops have shown that some confusion remains regarding when and how ABMTs implemented in marine areas may qualify as Fisheries OECMs. This confusion stems in part from a lack of clarity around the types of biodiversity

outcomes that may arise from application of ABMTs by marine sectors such as fisheries. It also lies in a lack of consensus around the type and the extent of biodiversity outcomes expected for OECM recognition.

In response to this need, FAO is now in the process of developing additional guidance to accompany the FAO Fisheries OECM handbook (FAO, 2022a). Guidance will include how to apply the OECM criteria in inland fisheries and RFMOs, how communities can identify OECMs, and how to identify biodiversity outcomes stemming from area-based fisheries management, etc. One volume of this supplementary guidance will support countries in evaluation of OECM Criterion C – whether a managed area is contributing positively to in-situ biodiversity conservation. This supplementary guidance on Criterion C will be built around a biodiversity outcomes framework for Fisheries OECMs (hereafter framework, or draft framework). The framework is expected to support increased clarity and transparency in the identification of biodiversity outcomes, including understanding what positive biodiversity outcomes can be expected to arise from fisheries ABMTs, thus supporting FAO Members to evaluate fisheries area-based management against OECM Criterion C.

To refine the draft framework, an expert workshop was organized and executed by FAO during the Fifth International Marine Protected Area Congress (IMPAC5) in February of 2023. Held in Vancouver, Canada from 3 to 9 February 2023, IMPAC5 a global forum that brought together ocean conservation professionals and high-level officials to inform, inspire and act on marine protected areas and OECMs. The congress was composed of hundreds of symposiums, speed talks, knowledge sharing sessions and side events, with a programme organized around several major themes. Significantly, it focused particularly on providing an opportunity to bring together Indigenous Peoples and cultures from around the world to collaborate on issues of marine conservation and governance. FAO therefore decided to use IMPAC5 as an opportunity to hold a workshop for the refinement of a draft biodiversity outcomes framework associated with area-based fisheries management. In this light, IMPAC5 provided an excellent opportunity to solicit feedback from transdisciplinary experts on the framework, and the workshop itself aligned with all IMPAC5's themes and cross-cutting streams (see Annex D).

Overview of the workshop

The purpose of the workshop was to solicit feedback from transdisciplinary experts to refine FAO's draft biodiversity outcomes framework for Fisheries OECMs. Those invited to do so included, among others, ecologists, social scientists, and spatial management practitioners. The main objective of the event was to assess the draft framework in its current state – identifying its strengths and weaknesses – and gather technical feedback. Specifically, participating experts were asked to provide feedback on the following aspects:

- biodiversity outcomes that have the potential to arise from fisheries ABMTs, with respect to the following essential biodiversity variables (EBV) categories:
  - > ecosystem-/habitat-related EBV (e.g. habitat structure, ecosystem extent/fragmentation, ecosystem composition and functional type, and ecosystem function);
  - > community-composition-related EBV (e.g. taxonomic diversity and species interactions); and
  - > species/population-related EBV (e.g. species distribution, population abundance, population structure by age/size class, genetic composition, or species traits such as phenology, migratory behaviour and physiological traits);
- indicators and methods that might be useful to provide evidence of these biodiversity outcomes, as they relate to the distinct EBV categories;
- analysis of the strengths and weaknesses of the draft framework itself; and
- discussion of how to incorporate different forms of knowledge into the draft framework and when evidencing a biodiversity outcome more generally.

The workshop was designed to be collaborative and participatory, with opportunities to workshop subsets of the draft framework (using a 'world café' methodology), before coming together for full group discussion.

Background

OECMs are increasingly being recognized as a new policy tool for achieving global biodiversity conservation goals. They can occur under a variety of management and governance schemes. Conservation must be taking place for an area to qualify as an OECM, but the area does not need to have been created with biodiversity conservation as a main objective (CBD, 2018). This is a core difference between protected areas and OECMs. However, determining whether the biodiversity outcomes occurring under ABMTs comply with OECM Criterion C – that an area must achieve sustained and effective contribution to the *in situ* conservation of biodiversity – has proved a challenge.

The purpose of FAO's planned biodiversity outcomes framework for Fisheries OECMs is to provide common ground for discussions of net-positive biodiversity outcomes associated with fisheries ABMTs. In response to the newly adopted Target 3 of the Kunming-Montreal Global Biodiversity Framework, governing authorities and entities need assistance to determine what should and should not count towards this target. Characterizing the range of potentially relevant biodiversity outcomes arising from fisheries ABMTs could support increased clarity and shared understanding in discussions on the recognition of Fisheries OECMs. This framework is being developed as a supplement to FAO's Fisheries OECM handbook (FAO, 2022a) and will contribute guidance specific to OECM Criterion C.

A draft framework for identifying biodiversity outcomes

FAO's draft framework consists of four evaluation components (Table 1). The draft framework seeks to systematically link ABMT types (Component 1) with relevant ecosystem element(s) (Component 2) and biodiversity variable(s) (Component 3), in order to enable the clear articulation of biodiversity outcomes that result from ongoing area-based management. The final component, "evidencing outcomes" (Component 4) involves identifying the relevant indicators, methods and types of knowledge that can support understanding of the biodiversity outcome – i.e. the influence of the fisheries ABMT on relevant ecosystem elements in terms of relevant biodiversity variables. This includes clarifying how "positive" and "negative" outcomes might be defined in the context of the specific managed area and relevant ecosystem elements and biodiversity variables.

In developing a framework to evaluate biodiversity outcomes arising from fisheries ABMTs, FAO seeks to: draw on globally accepted concepts and terminology, and support the application of that information in a fisheries context.

Fisheries management employs diverse spatial management measures, or fisheries ABMTs, which

Table 1. Biodiversity outcomes framework components.

Framework component	Purpose
Type of ABMT, history, and context	Identify what type of ABMT is in place (i.e. how does the area's management constrain dimensions of time, space, and/or activities); describe the history of the ABMT such as its establishment date (length of time in place), location, size, and jurisdiction(s); and describe contextual features such as overall ecosystem health and key current or potential future threats to the ecosystem
Essential ocean variables	Identify what ecosystem element(s) is influenced by the ABMT
Essential biodiversity variables	Identify what biodiversity variable(s) is influenced by the ABMT
Evidencing outcomes	Identify indicator(s), method(s), and knowledge(s) (e.g. scientific, Indigenous, lay) that may support understanding of the influence of the ABMT on relevant EOV(s) in terms of relevant EBV(s).

Source: Authors' own elaboration.

have the potential to contribute to preserving or enhancing biodiversity. The type and extent of biodiversity outcomes that may arise from a fisheries ABMT will depend on the ABMT's characteristics. These will include: where it occurs (space dimension), when it occurs (time dimension), and what activities may be restricted (activities dimension) (Rice *et al.*, 2018; see Annex B for a table which further details ABMTs across these dimensions). As such, a necessary first component of the framework is to identify the specific characteristics of the relevant fisheries ABMT.

To link FAO's guidance on OECM Criterion C to global biodiversity conversation discussions, two globally predominant frameworks are the basis for the second and third components of FAO's draft biodiversity outcomes framework: the essential biodiversity variables (EBV) framework (Table 2) and the essential ocean variables (EOV) framework (Table 3). The EBV and EOV frameworks are synergistic efforts which identify priority variables for monitoring. They both support reporting against internationally agreed conventions and treaties, including the CBD, United Nations Sustainable Development Goals (SDGs) and the new international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (referred to as the BBNJ agreement) (Muller-Karger *et al.*, 2018). The concept of essential variables is that a discrete, standard set of variables can be identified through global collaboration and used to characterize the state and trends in any ecosystem without losing significant information (ConnectinGEO, 2016).

With respect to evaluating ABMTs against OECM Criterion C, the EOV framework can provide an answer to the question "what does an ABMT influence?", by offering categories to consider the important biodiversity attributes that exist within a managed coastal or ocean area systematically. The EOV concept is being developed by the Global Ocean Observing System (GOOS) of the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO). It supports data collection on status and trends in physics, biogeochemistry, biology and ecosystems (GOOS, 2016; Miloslavich *et al.*, 2018; Muller-Karger *et al.*, 2018). The latter two categories of EOVs – biology and ecosystems – are the most relevant to the evaluation of biodiversity outcomes. Biological and ecological EOVs are focused on productivity at the varying trophic levels – such as the base of the food chain, higher trophic levels, and habitat-forming species (Muller-Karger *et al.*, 2018).

In turn, the EBV framework can help answer the question "how does an ABMT influence relevant EOVs?" It does so by providing categories to clearly identify the aspect(s) of biodiversity affected, whether within species (e.g. allelic diversity, population structure by age/size class, phenology); across species (taxonomic diversity); or at the level of ecosystem

Table 2. EBV classes and candidate variables

EBV class	EBV candidate
Genetic composition	Co-ancestry, allelic diversity, population genetic diversity, breed/variety diversity
Species populations	Species distribution, population abundance, population structure by age/size class
Species traits	Phenology, body mass, natal dispersion distance, migratory behaviour, demographic traits, physiological traits
Community composition	Taxonomic diversity, species interactions
Ecosystem function	Net primary productivity, secondary productivity, nutrient retention, disturbance regime
Ecosystem structure	Habitat structure, ecosystem extent and fragmentation, ecosystem composition by functional type

Source: ConnectinGEO. 2016. Deliverable D2.2 – EVs current status in different communities and way to move forward. Version 1.0.0. EU Framework Program for Research and Innovation (SC5-18a-2014 - H2020), Project Nr: 641538.

Table 3. Updated list of EOVs, including biological and ecological ("bio-eco") EOVs

Physics	Biogeochemistry	Biology and ecosystems
• Sea state • Ocean surface stress • Ocean surface heat flux • Sea ice • Sea surface height • Sea surface temp • Subsurface temperature • Surface currents • Subsurface currents • Sea surface salinity • Subsurface salinity	• Oxygen • Inorganic carbon • Transient tracers • Particulate matter • Nutrients • Nitrous oxide • Dissolved organic carbon • Ocean colour • Stable carbon isotopes	• Phytoplankton biomass and density • Zooplankton biomass and diversity • Fish abundance and distribution • Abundance and distribution of marine turtles, birds and mammals • Hard coral cover and composition • Seagrass cover and composition • Mangrove cover and composition • Macroalgal cover and composition • Microbe biomass and diversity (emerging) • Invertebrate abundance and distribution (emerging) • Ocean sound

Source: Bax, N.J. *et al.* 2019. A response to scientific and societal needs for marine biological observations. *Front. Mar. Sci.* 6, 395.

structure or ecosystem function (Muller-Karger *et al.*, 2018). The EBV framework is being developed by the Group on Earth Observation, Biodiversity Observation Network (GEO BON). As a subgroup of GEO BON, the Marine Biodiversity Observation Network (Marine BON) is working to apply the EBV framework in a marine context (GEO BON, 2017; Muller-Karger *et al.*, 2018). The EBVs have been grouped into six categories of biodiversity variables which include genetic composition, species populations, species traits, community composition, ecosystem structure, and ecosystem function (Pereira *et al.*, 2013).

To focus these global conversations into targeted discussions around biodiversity outcomes arising in the context of fisheries ABMTs, it is important to identify which classes of biodiversity variables and ocean elements are most likely to be influenced by fisheries ABMTs. A systematic review by Himes-Cornell *et al.* (2022) found that most biodiversity outcomes linked to fisheries ABMTs were associated with variables falling under three of the EBV classes: species/populations, community composition, and ecosystem structure. A smaller proportion of biodiversity outcomes were associated with two additional EBV classes: genetic composition and species traits. No biodiversity outcomes identified in the review were associated with the final EBV class of ecosystem function.

OECM Criterion C suggests that, to qualify as an OECM, the management of an area must achieve, or be expected to achieve, positive, *in situ* biodiversity outcomes. Building on the first three components described above, the final component of the framework focuses on the measurement and interpretation of biodiversity outcomes – i.e. characterizing the AMBT's impact (in terms of EBV) on important biodiversity attributes (with reference to EOV). Such characterization involves identifying the indicators, methods and types of knowledge that may support the understanding – and interpretation of – the influence of the ABMT on biodiversity. Importantly, it also involves clarifying what is meant by "positive biodiversity outcome" in the specific context being considered. For example, in addition to positive trends in indicators – such as increases in population size or abundance or fecundity – a positive contribution to biodiversity may also include the maintenance of healthy status, especially if non-managed areas nearby are in decline (Bonito, 2011).

Fisheries ABMT biodiversity outcomes checklist

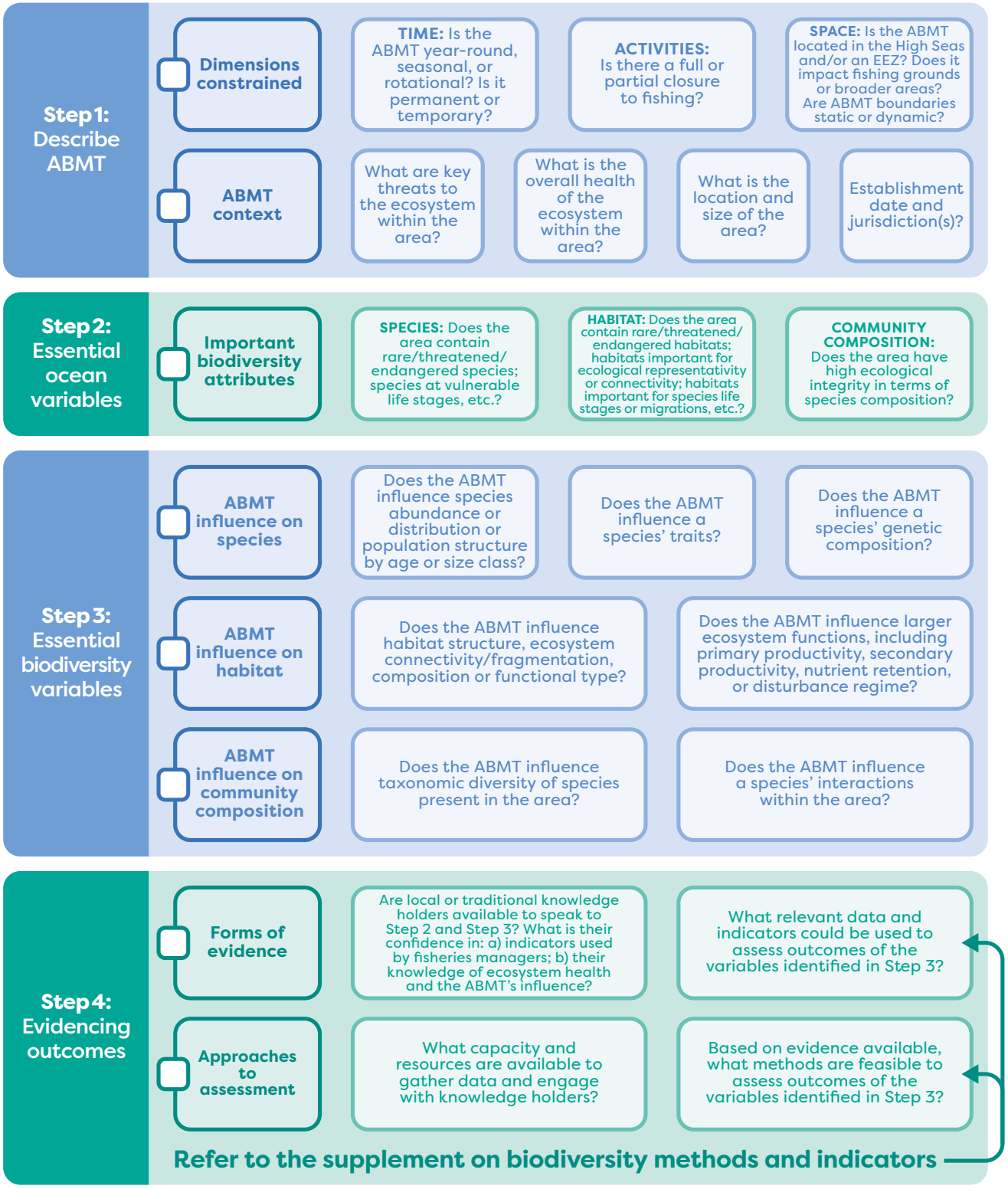
In addition to exploring the potential use of the EOVs and EBVs in the evaluation of biodiversity outcomes, FAO has created a draft checklist (Figure 1) to provide an example of how fishery managers might operationalize the components of the framework (Table 1), step-by-step. The checklist includes all the framework components, and aims to provide the guidance required for a robust evaluation of an ABMT against OECM Criterion C; this is one step in the full evaluation of candidate OECMs (FAO, 2022a).

When investigating biodiversity outcomes, the first step on the checklist is to identify the relevant ABMT(s). This includes identifying how and whether dimensions of space, time, and activity are constrained in a particular ABMT; it also means understanding the broader context in which the ABMT is being applied. This step should include analysis of the timescale (i.e. how long has the ABMT been in place) and geographic location, as well as investigating external threats to the ecosystem and its overall health, among other contextual factors.

The second and third steps of the checklist draw on global frameworks to identify what ocean elements the ABMT is influencing (Step 2, EOV framework) and how those ocean elements are being influenced, i.e. what specific biodiversity variables are being impacted (Step 3, EBV framework).

Finally, to characterize the impact of the ABMT on biodiversity attributes, the fourth step addresses the technical process of evidencing a biodiversity outcome – linking knowledge with indicators to discern whether a positive outcome has occurred or may reasonably be expected to occur. This final step on the checklist involves identifying an approach to assessment, including potential qualitative and quantitative indicators, and the associated methods for data collection. This step accounts for diverse forms of knowledge (e.g. Indigenous, scientific, lay), which may provide evidence and/or support processes to gather evidence and establish consensus about the biodiversity outcomes resulting from a fisheries ABMT. This step also highlights the need for context-specific definitions of positive biodiversity outcomes; for instance, a positive outcome related to a biodiversity variable in the context of one fisheries ABMT may be an increase in biodiversity, but the maintenance of its status in the context of another. It is worth noting that FAO intends to include a review of potential indicators and methods as part of its future guidance on Criterion C, which will be included alongside the framework for reference during Step 4.

Figure 1. Draft fisheries ABMT biodiversity outcomes checklist



Source: Authors' own elaboration.

Workshop results

Participants

The IMPAC5 workshop included 43 participants in total (43 percent male and 57 percent female) with regional representation from Africa, North America, Asia, South America and Europe, as well as individuals with a more global perspective (Figure 2). The professional affiliations of participants ranged from universities to regional fisheries management organizations (RFMOs), to governments and membership unions. Most of the participants (95 percent) indicated that they wished to stay involved in the project beyond the workshop (see Annex A for the list of participants).

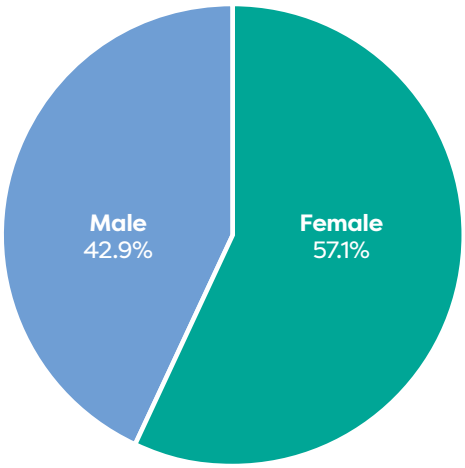
Opening of the workshop

Amber Himes-Cornell, FAO Fishery Officer, opened the workshop with an introductory presentation. She welcomed participants and provided an overview of the work leading up to the workshop as well as its expected structure. This information was also provided to workshop participants in a printed handout (see Annex B). Himes-Cornell offered background information on the Kunming-Montreal Global Biodiversity Framework and OECMs, explaining their relevance to global biodiversity conversations. She also explained the potential for fisheries ABMTs to be identified as Fisheries OECMs, by virtue of their alignment with the CBD definition and criteria for OECMs (Annex C).

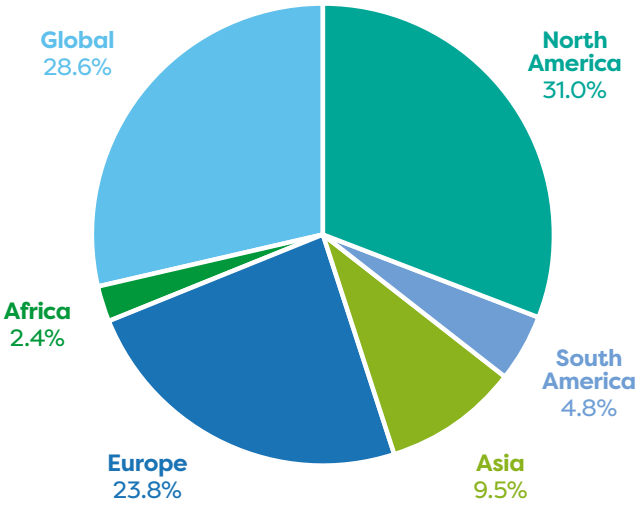
Following the introduction of Fisheries OECMs, FAO reviewed its efforts on providing guidance for recognizing Fisheries OECMs. With this in mind, the presentation highlighted the recently published Fisheries OECM handbook (FAO, 2022a) and illustrated the need for a clear, systematic discussion about biodiversity outcomes. This led into the purpose of the workshop itself. Himes-Cornell then handed it over to Kristin Hoelting, FAO NFI Fisheries Management Consultant, who provided an outline of the Fisheries ABMT Biodiversity Outcomes Framework and reviewed its four components (ABMT, EOV, EBV, and outcomes) in detail (Figure 3). The FAO team used the Lophelia Coral Conservation Area as a case study to illustrate the potential application of the framework components (identifying the relevant ABMT, EOV, EBV and then evidencing the biodiversity outcomes observed).

Figure 2. Workshop participant demographics

A.



B.



Note: Panel A shows the gender breakdown of participants; Panel B details their regional affiliation.
Source: Authors' own elaboration.

The introductory presentations concluded with several overarching questions the FAO team hoped the workshop participants could help answer. The FAO team asked participants to consider: first, whether the EBV and EOV are adequate and effective frameworks to build into guidance on evaluating Criterion C; and if not, what frameworks participants might suggest as alternatives. Second, the FAO team asked participants to consider how and whether FAO's guidance should ultimately be narrowed down from broader frameworks, such as EBV and EOV, to target variables and elements known to be influenced by fisheries ABMTs. The FAO team then provided an overview of instructions for breakout tables, and participants dispersed to their first discussion table.

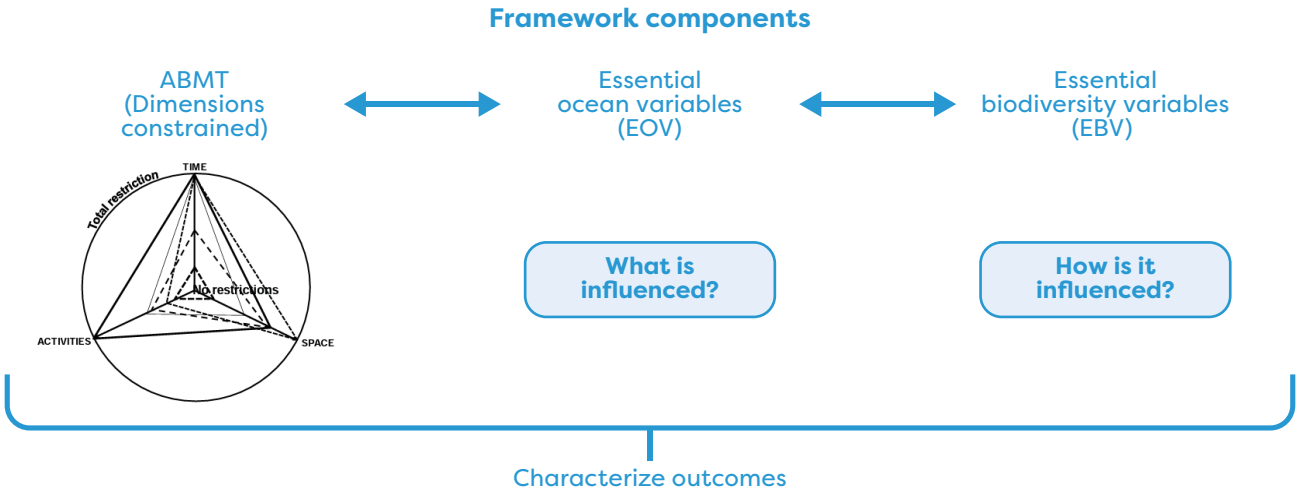
Breakout groups

Breakout groups during the workshop were carried out using a world café methodology, which emphasizes collaborative, conversational dialogue, allowing for equilibrium and shared ownership of the discussion. This style of discussion is noted as an excellent means of fostering dialogue in the workplace or in any professional development setting (Breen, 2021).

During breakout groups, participants rotated between five tables with unique discussion topics; over the course of the workshop, the participants participated in three breakout group discussions of their choosing, for 30 minutes each. Discussion topics in the world café rotations included: biodiversity outcomes arising from fisheries ABMTs that related to diverse EBV categories (breakout groups 1–3); a strengths-weaknesses-opportunities-threats (SWOT) analysis of the framework (breakout group 4); and a discussion of how diverse knowledge systems and knowledge holders can inform an understanding and evaluation of biodiversity outcomes arising from fisheries management (breakout group 5). Workshop participants were instructed to consider their own experience when engaging in these discussions. This could include focusing on biodiversity outcomes related to ocean elements with which they were familiar, such as particular habitats or organisms, and to provide input from the sociocultural and political contexts familiar to them.

Large pieces of poster paper were present at each table where participants could add ideas, comments, concerns, questions, etc. on post-it notes (see Annex D). With every session, participants were

Figure 3. Components of the draft Fisheries ABMT Biodiversity Outcomes Framework and their relationship to each other



Source: Authors' own elaboration based on (1) Rice, J. *et al.* 2018. Other Effective Area-Based Conservation Measures (OEABCMs) Used in Marine Fisheries: A Working Paper. Background Information Document for the CBD Expert Workshop on Marine Protected Areas and Other Effective Area-based Conservation Measures for Achieving Aichi Biodiversity Target 11 in Marine and Coastal Areas. 6–9 February 2018 - Montreal, Canada; (2) ConnectinGEO. 2016. Deliverable D2.2 – EVs current status in different communities and way to move forward. Version 1.0.0. EU Framework Program for Research and Innovation (SC5-18a-2014 - H2020), Project Nr: 641538.; and (3) Bax, N.J. *et al.* 2019. A response to scientific and societal needs for marine biological observations. *Front. Mar. Sci.* 6, 395.

able to see what was written by the past group and could add, remove, or edit any of the post-its. By the end of the three sessions, the posters displayed a culmination of ideas presented during each session (Figure 4).

Figure 4. Image of poster paper at breakout group 1 at the end of the workshop

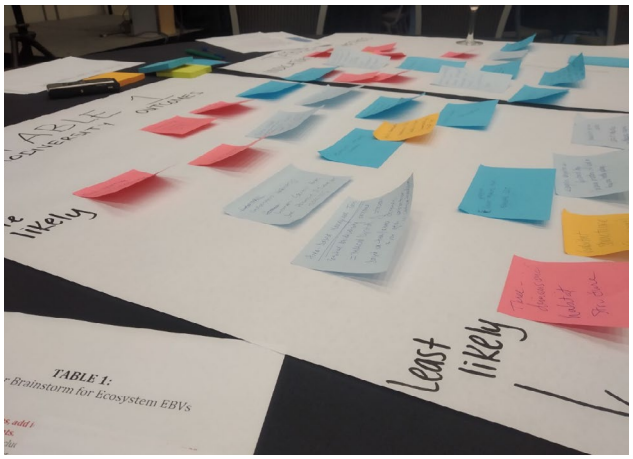


Photo © Sarah Davidson/FAO

The topics of the five breakout groups included:

1. outcomes, indicators and methods related to ecosystem/habitat EBV categories;
2. outcomes, indicators and methods related to community composition EBV categories;
3. outcomes, indicators and methods related to species/populations EBV categories;
4. SWOT (strengths, weaknesses, opportunities, threats) analysis of the overall framework; and
5. incorporation of diverse knowledge systems and knowledge holders.

In breakout groups 1–3, participants were asked to identify examples of biodiversity outcomes that may arise from fisheries ABMTs in practice. The outcomes related to:

1) ecosystem/habitat-related EBV categories (e.g. habitat structure, ecosystem extent/fragmentation, ecosystem composition and functional type, and ecosystem function);
2) community composition-related EBV categories (e.g. taxonomic diversity and species interactions); and
3) species/population-related EBV categories (e.g. species distribution, population abundance, population structure by age/size class, genetic composition, or species traits such as phenology, migratory behaviour and physiological traits).

In addition, participants were asked to rank the outcomes in the order they believed they were most likely to occur as the result of a fisheries ABMT. The focus of the discussion then switched to the biodiversity outcomes that would most likely be achieved by fisheries ABMTs, as well as the relevant indicators and measurement methods for identifying and evaluating them. The discussion provided an opportunity for participants to operationalize the components of the draft framework, while also generating valuable feedback on fisheries ABMTs and biodiversity more generally.

The following sections provide further description of the purpose of each table, as well as the instructions given to participants while in each breakout group. The key takeaways and questions from each group are also listed.

Breakout group 1: Ecosystem/habitat outcomes, indicators and methods

The purpose of breakout group 1 was to investigate and identify the biodiversity outcomes, their associated indicators and measurement methods that related to the ecosystem/habitat EBV categories which could be expected to occur as a result of area-based fishery management.

Participants in breakout group 1 were given the following set of instructions to investigate ecosystem/habitat-related biodiversity outcomes.

Step 1 – Using post-it notes, add ideas of positive biodiversity outcomes related to ecosystems/habitats.

Relevant EBV categories include: habitat structure, ecosystem extent/fragmentation, ecosystem composition and functional type, and ecosystem function (e.g. productivity, nutrient retention, disturbance regime).

Note: "Positive outcome" may include maintaining or improving its status.

Step 2 – Organize these biodiversity outcomes in order, based on the likelihood that a fisheries ABMT could produce the outcome.

Step 3 – Using post-it notes, add ideas for indicators for each biodiversity outcome.

Step 4 – Using post-it notes, add ideas for methods to access knowledge/data to track status of indicators. Keep both data-rich and data-limited situations in mind.

Include context about the difficulty level (low, medium, or high) for accessing knowledge/data about the indicator.

Participants in breakout group 1 were also given a series of guiding questions specific to the ecosystem and habitat scales, as follows:

Guiding questions:

- Which ecosystem/habitat EBV categories are most or least likely to be relevant to an evaluation of biodiversity outcomes arising from fisheries ABMTs?
- What ecosystem/habitat indicators could be used to evaluate whether those outcomes have been achieved?
- What methods could be used to measure the indicators you have noted? Consider both data-rich and data-limited contexts.

In summary, participants agreed that it was more challenging to identify indicators for the ecosystem/habitat-related EBV categories discussed in breakout group 1 than those in other breakout groups. Participants discussed the need to separate ecosystem-scale outcomes from habitat-scale outcomes.

Key takeaway messages from the participant discussion about the ecosystem/habitat topic included:

- Habitat structure (such as protecting or preserving the benthos) was viewed as the most likely ecosystem/habitat-related biodiversity outcome from fisheries ABMTs. Other expected ecosystem/habitat-related biodiversity outcomes included:
  - percent cover as an indicator;
  - abundance of ecosystem-building species as an indicator; and
  - the acknowledgement that a multitude of methods may be possible for assessing these indicators.
- Catch per unit of effort (CPUE) was noted as a measurement method that, while accessible, should not be used on its own to assess the ecosystem/habitat-related indicators of biodiversity outcomes.
- Outcomes at the ecosystem and habitat scale should be considered separately, with an emphasis placed on examining outcomes at the habitat scale. Since ABMTs generally only occur in one part of the water column, it seems unlikely that positive outcomes across the water column (also described as across trophic levels) will occur from a fisheries ABMT.
- Especially when trying to investigate biodiversity outcomes at a scale as large as ecosystem, the feasibility of such an examination should be considered in the guidance this framework provides, while considering factors such as cost, effectiveness, resourcing and capacity.
- A qualifying biodiversity outcome could be based on target species or bycatch species, but recognition of an OECM should probably not be based on outcomes for one species alone. Instead, the cascading impacts of the fisheries ABMTs should be considered collectively as relevant biodiversity outcomes.

Breakout group 2: Community composition outcomes, indicators and methods

The purpose of breakout group 2 was identical to that of breakout group 1, with a focus on community-composition-related EBV categories. The instructions given and questions posed to participants in breakout group 2 were identical to those from breakout group 1, albeit adjusted to focus on community composition, as follows:

> Step 1 – Using post-it notes, add ideas of positive biodiversity outcomes related to community composition.
>
> Relevant EBV categories include taxonomic diversity and species interactions.
>
> Note: "Positive outcome" may include maintaining or improving status.
>
> Step 2 – Organize these biodiversity outcomes in order, based on the likelihood that a fisheries ABMT could produce the outcome.
>
> Step 3 – Using post-it notes, add ideas for indicators for each biodiversity outcome.
>
> Step 4 – Using post-it notes, add ideas for methods to access knowledge/data to track status of indicators. Keep both data-rich and data-limited situations in mind.
>
> Include context about the difficulty level [low, medium, or high] for accessing knowledge/data about the indicator.

Similar to breakout group 1, participants in breakout group 2 were asked guiding questions specific to community composition, as follows:

Guiding questions:

- Which community composition EBV categories are most or least likely to be relevant to evaluation of biodiversity outcomes arising from fisheries ABMTs?
- What community composition indicators could be used to evaluate whether those outcomes have been achieved?
- What methods could be used to measure the indicators you have noted? Consider both data-rich and data-limited contexts.

To summarize the discussions held in breakout group 2, participants largely questioned which biodiversity outcomes and indicators would genuinely be most applicable to positive outcomes related to community composition. They agreed that it was not feasible to measure an entire habitat's composition and diversity. As a result, it would be helpful to divide marine organisms into functional groups, each with indicator species – this would be an effective way to measure community-composition-related outcomes for a given ABMT. Another key takeaway was the need to avoid characterizing community composition in 'rigid' terms, given that the degree of richness, abundance, population distributions, and histories of degradation vary widely across marine areas. Measuring outcomes associated with community composition should therefore be flexible. Participants noted that FAO's guidance on Criterion C should clearly articulate the variation in ecological contexts across regions and encourage those using the framework to refrain from blanket, one-size-fits-all approaches to measuring community composition.

Key takeaway messages from the participant discussion about community composition included:

- While relevant indicators, size changes and population abundance are likely not enough to fully understand community composition.
- Cheap and easy data collection methods will probably work best for many countries and entities with limited resources. However, where resources allow, utilizing eDNA would be incredibly useful to understand community-composition-related EBV categories.
- It is important to consider species diversity and structure vs. functional diversity and structure of the marine community; community composition must be assessed for both habitat-forming species as well as the species that rely on the habitat.
- An abundance of vital functional, habitat-forming species can be a biodiversity outcome in and of itself.
- Functional redundancy could be a key factor for community composition; a variety of species that fulfil the same niche or function in an ecosystem leads to increased ecosystem resilience.

- The indicators for function such as age, size-class, population structure, need to be clarified.
- Some caution is needed when evaluating community composition to protect against confounding factors, such as climate change and/or spillover.
- To address differences in data-rich and data-limited situations, the framework might be applied most effectively on a case-by-case basis.
- Local knowledge has important implications and should not be ignored.

Breakout group 3: Species/population level outcomes, indicators and methods

Similar to breakout groups 1 and 2, breakout group 3 asked participants to investigate and identify biodiversity outcomes, indicators and methods of measurement relevant to species/population-level EBV categories. The instructions given to participants in breakout group 3 mirrored those given to breakout groups 1 and 2, as did the question posed to participants:

> Step 1 – Using post-it notes, add ideas of positive biodiversity outcomes related to species /populations.
>
> Relevant EBV categories include: species distribution, population abundance, population structure by age/size class, genetic composition (e.g. allelic diversity, breed and variety diversity, population genetic differentiation), or species traits (e.g. phenology, migratory behaviour, physiological traits).
>
> Note: A "positive outcome" may include maintaining or improving status.
>
> Step 2 – Organize these biodiversity outcomes in order, based on the likelihood that a fisheries ABMT could produce the outcome.
>
> Step 3 – Using post-it notes, add ideas for indicators for each biodiversity outcome.
>
> Step 4 – Using post-it notes, add ideas for methods to access knowledge/data to track status of indicators. Keep both data-rich and data-limited situations in mind.
>
> Include context about the difficulty level (low, medium, or high) for accessing knowledge/data about the indicator.

Participants in breakout group 3 were asked guiding questions specific to the species/population level:

Guiding questions:

- Which species/population EBV categories are most or least likely to be relevant to the evaluation of biodiversity outcomes arising from fisheries ABMTs?
- What species/population indicators could be used to evaluate whether those outcomes have been achieved?
- What methods could be used to measure the indicators you have noted? Consider both data-rich and data-limited contexts.

Overall, participants in breakout group 3 questioned whether biodiversity outcomes related to species/population EBV categories would be sufficient on their own to justify recognition of an area as an OECM. It was clear to participants that the focus for biodiversity outcomes should be on non-target species that are affected by a fisheries management measure, and that a multispecies approach would be preferable.

Key takeaway messages from the participant discussion about species/populations included:

- The framework should include a multispecies approach in which relevant biodiversity outcomes relate to multispecies benefits arising from a fisheries ABMT. In other words, multiple variables in the ecosystem should benefit from the fisheries management measure, not just a single species.
- No one indicator alone would be sufficient to demonstrate true biodiversity conservation; multiple indicators are needed to demonstrate a positive biodiversity outcome. Single species and multispecies indicators may be used in tandem.
- The species/population of interest, its use of the area, and the amount of time that individuals are within the OECM boundary, should be important considerations when evidencing a biodiversity outcome with this EBV class.
- The reduction in mortality of bycatch could be an indicator of population increase. This brought up the question of the level at which average mortality would be reduced, and what amount of reduction in mortality would be enough to create

a positive outcome. It was clear that any mortality reduction should occur within the ABMT to constitute a positive *in situ* biodiversity outcome.

- The timeline and timeframes for expecting biodiversity benefits may differ depending on species/population type (e.g. mobile versus sessile/benthic). The question was raised as to when an area is recognized as an OECM – before observable benefits or after. This question relates to potential reporting of Fisheries OECMs based on the reasonable expectation that the measure will result in positive biodiversity outcomes in the future. The time needed to adequately account, and allow for, different contexts should be included.
- Larval abundance is not a good indicator because it is too fisheries-independent, and the stock must be really low in order to see an impact on it.
- Fisheries performance is not necessarily equal to ecological performance.

Breakout group 4: Strengths-weaknesses-opportunities-threats (SWOT) analysis

The purpose of breakout group 4 was to analyse the draft framework, identifying its strengths and weaknesses, asking participants to identify points of confusion within it and ways of improving it. This was done via a SWOT analysis, which allowed participants to utilize their expertise and provide insight on how to further refine the draft. The following instructions and questions were put to participants in breakout group 4:

Step 1 – Refer to the fisheries ABMT biodiversity outcomes checklist in the handout for an overview of the framework (see Annex B).

Step 2 – Using post-it notes, add examples of strengths, weaknesses, and points of confusion in the draft fisheries ABMT Biodiversity Outcomes Framework.

Step 3 – Using post-it notes, add examples of ways to improve the framework, i.e. to address weaknesses or clarify points of confusion.

Participants in breakout group 4 were asked guiding questions specific to undertaking a SWOT analysis, as follows:

Guiding questions:

- Which questions in the checklist are data-intensive and which are not?
- Which questions in the checklist would be hard or easy to answer?
- Should additional questions be asked? Should any questions be reworded?
- Is the EOV framework useful? Is it appropriate or necessary to link the "important biodiversity attributes" of areas to larger discussions around essential biological and ecological ocean elements?
- Is the EBV framework useful? Is it appropriate to use this framework to characterize biodiversity outcomes arising from fisheries ABMTs?
- Are only certain categories in the EBV/EOV frameworks relevant to an evaluation of fisheries ABMT biodiversity outcomes? Which ones?
- Are there other frameworks that may be more useful or appropriate to use to inform discussions of biodiversity outcomes arising from fisheries ABMTs?

Key takeaway messages from the participant discussion about the SWOT analysis are detailed below, divided into the relevant portion of the SWOT analysis:

Strengths of the draft framework

- There are benefits to the proposed framework structure (e.g. decision tree, checklist, transparency, making space for reproducibility, clarity); ultimately, it could act as a tool to evaluate OECMs deriving from other sectors, not just fisheries.
- Using existing frameworks such as EBV and EOV is a strength that lends credibility and structure; as does the use of existing data monitoring systems (in or out of fisheries contexts).
- Although this framework is geared towards supporting fisheries management entities, it goes beyond the single-species benefits of

fisheries ABMTs to consider broader benefits (e.g. ecosystem services, biodiversity).

- The system of ranking outcomes and indicators, and the subsequent prioritization based on a range of factors (feasibility, capacity, import) is a strength.

Weaknesses of the draft framework

- There is currently a gap in the framework in terms of understanding the level of biodiversity benefit needed to adequately evidence an outcome.
    - For example: Is it just the target outcome or additional outcomes that should be included/assessed to justify a positive biodiversity outcome?
    - One participant noted that they did not see any accommodation or reference to the additional benefits that are expected in addition to fisheries management outcomes in the draft framework.
- There is general lack of clarity regarding the limits of what is being measured to evidence an outcome and comparing target outcomes with additional outcomes.

An additional identified weakness, more for Fisheries OECMs in general and not the draft framework, was how hard it is to manage and address multisectoral threats if they exist within the OECM area. However, participants noted that since biodiversity will need to be assessed within the OECM area, areas with too much multisectoral pressure will perhaps necessarily exclude themselves – and thus the draft framework does not need to address this aspect of assessment.

Points of confusion

It should be noted that much discussion in this breakout group veered towards an exploration and critique of the OECM definition and criteria, as participants tried to better understand the OECM context before analysing the framework itself. The discussion thus developed into a SWOT analysis of OECMs and how likely it would be to assess biodiversity outcomes arising from fisheries measures where those biodiversity outcomes were not the original target or within the scope of monitoring.

Ways to improve

One opportunity for improvement in the draft framework could be to refer to "biocultural diversity" rather than biodiversity, as it may be more inclusive. The inclusion of this language could be salient when assessing outcomes in coastal-community-managed and/or Indigenous fishing areas. Similarly, capturing ecosystem services more fully in the framework would further strengthen the link between biodiversity and cultural diversity.

Participants suggested that an additional area of improvement would be to further contextualize and add weight to different factors of the framework. Some adjustment of the expectations of what this framework can provide may be necessary (i.e. "tempering expectations").

Breakout group 5: Forms of evidence and knowledge

This breakout group focused on different forms of evidence and knowledge, seeking feedback from participants on how best to incorporate this diversity into the framework. The instructions and questions given to participants at breakout group 5 were as follows:

> Step 1 – Referring to the fisheries ABMT biodiversity outcomes checklist in the handout (Annex B), consider the diverse forms of knowledge that may be relevant to identifying important biodiversity attributes (Step 2); understand how these attributes are influenced by the fisheries ABMT (Step 3); and identify available approaches to evidencing these outcomes (Step 4).
>
> Step 2 – Using post-it notes, add examples of knowledge that could be relevant at each step of the framework, including monitoring data, scientific expertise, and local and traditional ecological knowledge. Keep both data-rich and data-limited situations in mind. Include context about the difficulty level (low, medium, or high) for accessing the knowledge.

Participants in breakout group 5 were asked guiding questions related to the different forms of evidence and knowledge that could be used to inform the draft, as follows:

Guiding questions:

- Consider a biodiversity attribute of which you may have direct knowledge and experience.
  - What kinds of evidence can be provided/ collected to track status and trend information about this biodiversity attribute in data-limited situations?
  - What methods could be used to gather knowledge/collect monitoring data about this biodiversity attribute?
  - Consider both data-rich and data-limited contexts.
- How could local and traditional knowledge-holders be engaged to provide relevant knowledge and/or carry out monitoring of important biodiversity attributes and the effect of a fishery ABMT on those attributes?
- What resources are available to local and traditional knowledge-holders that can help document biodiversity outcomes?
- Consider how diverse forms of knowledge may be relevant at distinct steps in the Fisheries ABMT Biodiversity Outcomes checklist.

To summarize, common points of discussion in breakout group 5 included the inherent challenges of providing evidence of positive biodiversity outcomes, both arising from differences across knowledge systems, data/ knowledge limitations, and differing interpretations of the OECM criteria. Participants agreed that, in general, it is better to rely on multiple sources of knowledge to justify the OECM label, and that having an awareness of baseline conditions is paramount.

Participants engaged in debate about use of different forms of evidence and knowledge; the dual and often conflicting needs for the "standardization" of data and the "reconciliation" of knowledge across knowledge systems; the question of how much [of any type of data, knowledge, or information] is enough to provide evidence of positive and sustained biodiversity outcomes; and what to do in data-limited situations.

Some participants felt that scientific approaches to monitoring are essential and did not think using local or traditional knowledge(s) alone (regardless of the "amount" of knowledge) was enough to provide evidence of biodiversity outcomes and justify an OECM label. The same participants saw a role for local and traditional knowledge, noting that it can be extremely helpful for identifying trends or as a starting point from which to further investigate. Other participants thought that, especially if a candidate OECM is in an Indigenous Peoples and local communities (IPLC) managed area, local and traditional knowledges should be considered on a stand-alone basis, but a minimum standard or "amount" of local and traditional knowledge should nonetheless be expected. Several participants, speaking from the perspective of countries where Indigenous People have historically been marginalized, discussed the importance of knowledge reconciliation.

As a related topic, participants felt that the standardization of approaches to providing evidence for Criterion C was not necessary and constituted an unrealistic goal. More specifically, some felt that a common data (or knowledge) requirement is not necessary, as the forms and scale of evidence will vary based on the impact of the fisheries ABMT in question. Other participants felt strongly that some basic standard of evidence should be in place for demonstrating that an area meets Criterion C.

On the topic of data limitations, one participant suggested using the Delphi process when data is absent, using expert opinion as an indicator or to identify a trend.

Several participants offered examples of potentially conflicting interpretations of the OECM criteria, and the challenge this could present in seeking to provide evidence of biodiversity outcomes. One participant spoke of differing interpretations of what constitutes "important biodiversity attributes." For example, fisheries managers may focus on indicators related to individual target fish species, while those outside of fisheries may emphasize additional EBV classes such as community composition or ecosystem structure and function. Other workshop participants debated

what constituted "long-term" outcomes. One participant thought that for fishers "long-term" must mean more than one generation; other participants, meanwhile, thought about the long term in relation to one's own personal experiences.

Key takeaway messages regarding the forms of evidence and knowledge included:

- There were disagreements over what would constitute sufficient levels of knowledge for providing evidence that an area meets the OECM criteria, regardless of knowledge type (i.e. a baseline is needed; it is probably best to not use just one index).
- When using IPLC knowledge, reconciliation rather than standardization should be kept in mind.
- For data gathered in the Western-science style, there is often still a desire to standardize (e.g. differences in CPUE reported by fishers than fisheries-independent data). FAO's biodiversity outcomes framework should therefore alert users to potential conflicts if different types of knowledge for evidencing a biodiversity outcome are used. For example, if the "burden of proof" varies across contexts (like in an IPLC area, where sufficient local and traditional knowledge should be enough to evidence a biodiversity outcome), conflicts may occur and preparations should be made to address these.
- In instances when a non-government entity seeks to submit an OECM to the World Database on OECMs, greater clarity is required in terms of the methods and standards that should be used for third-party assessment.
- The refinement of FAO's draft biodiversity outcomes framework needs more diverse voices, particularly so that Indigenous knowledge and science can be fully and equitably incorporated into the suite of options provided in FAO's guidance.

Summary of breakout group discussions

The following section summarizes the participant discussions held at the workshop, focusing particularly on the common themes of discussions at the different breakout groups.

Common themes linking discussions across breakout groups were feasibility and context-specific issues. Much discussion veered from the draft framework itself to OECMs more broadly, as participants grappled with understanding the challenges and strengths of the proposed framework. Furthermore, many participants felt that defining the "burden of proof" that should be expected from OECMs is paramount to making progress operationalizing OECM Criterion C. In this vein, participants noted that clarification is needed to determine the appropriate level of evidence that can be sourced across the diverse types of knowledge likely to be used in the OECM evaluation process.

The purpose of breakout groups 1–3 was to identify which biodiversity outcomes, related indicators and measurement methods are likely to derive from fisheries management with respect to several EBV classes identified: ecosystem/habitat structure and function, community composition and species/population. Common biodiversity outcomes perceived as likely to occur from fisheries ABMT, based on the discussions held in breakout groups 1, 2 and 3, were threat and bycatch reduction (Figure 5). Abundance as an indicator and eDNA as a method of indicator measurement were also commonly discussed in breakout groups 1, 2 and 3 (Figure 5).

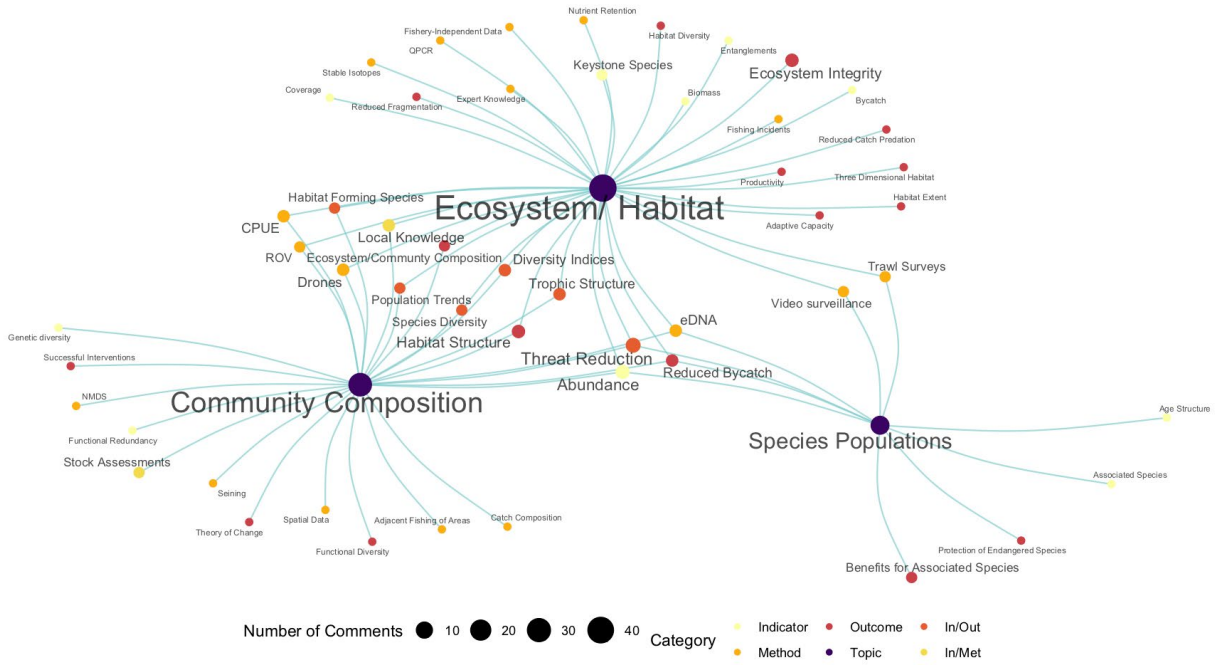
There was even more overlap in the discussion of relevant biodiversity outcomes, indicators, and measurement methods between breakout groups 1 and 2, with overlaps regarding the relevance of trophic structure, species diversity, local knowledge, drones, CPUE, etc. The overlap in discussions at each table may suggest that similar indicators could be relevant to the assessment of multiple EBV categories, and/or the challenge of binding discussions to one EBV class.

In addition to the common themes and the takeaway messages specific to the biodiversity outcomes and indicators breakout groups of 1, 2 and 3 mentioned above, key takeaway messages about the framework and the workshop overall are listed below.

Key takeaway messages from the participant discussions across all tables included:

- The framework should be presented in a 'menu' style for outcomes, indicators, and methods, with a suite of options that depend on factors that include, but are not limited to: feasibility, cost, resources and capacity.
- Notwithstanding its future 'menu' style, the guidance should suggest a minimum standard for what constitutes a positive outcome.
- Context-specificity must be a key consideration in the selection and interpretation of indicators (e.g. natural fluctuations of populations, temporal variations, spatial variations, manageable versus unmanageable threats, climate change impacts like warmer water temperatures, bias of catch data). Being explicit about and accounting for gaps, biases, and limitations of the indicators themselves needs to be a priority.
- There was agreement among participants that indicators should be specific to the management put in place, i.e. indicators should be selected on a case-by-case basis and should assess the influence of a fisheries ABMT on the specific biodiversity attributes the management tool is known to influence in the area.
- There should be a "top 3," or a priority list of outcomes that, if observed in association with a fisheries ABMT, can fulfil Criterion C based on the type of data or knowledge that is generally accessible in fisheries management.
- There may be a discrepancy between what a fishery manager would choose to measure compared to a governmental entity or a conservation scientist.
- There is likely to be disagreement about what to monitor (i.e. which biodiversity attributes are important?), who should decide what to measure (i.e. should it be fishery managers, government entities, or the conservation community?), and who

Figure 5. Visual representation of IMPAC5 side event workshop takeaways from breakout groups focused on indicators and methods



Note: These takeaways concern EBV categories related to species/populations, community composition and ecosystem/habitat, respectively.
Source: Authors' own elaboration.

should bear the "burden of proof" for monitoring and measuring indicators (fishery managers, higher levels of government, or non-government entities, etc.). Coordination between the fishery sector and the higher governing authority should seek agreement on objectives, methods, and responsibilities related to the monitoring and selection of relevant indicators and methods.

- There must be a level of accountability and guidance to ensure that biodiversity is sufficiently maintained or improved.
- There are important considerations to keep in mind when deciding what needs the most protection or conservation, for example when deciding whether all species should be treated as equal or whether one species should be given preferential treatment as an "important biodiversity attribute."
- The types of biodiversity outcomes that are acceptable and sufficient to justify the OECM label requires further definition. For example, if an area is not currently under threat, does a precautionary approach that maintains the good status of the area constitute a "positive biodiversity outcome?"
- Providing layers of protection could strengthen a weak measure.

Closing discussion

As the workshop concluded, participants gathered for a period of reflection and discussion. Each table's facilitator provided a recap of the conversations held at their tables. A general discussion vetting the framework and exploring potential applications and next steps followed. One participant noted that the constructive discussions held at the side event changed their opinion of how the process of understanding OECMs and fisheries-derived biodiversity was going. This change in opinion came from their appreciation that the FAO draft framework seemed to reflect upon and incorporate the same challenges the participants face in their jobs, in terms of metrics and case-specific considerations, etc. Finally, participants were asked to share their interest in staying involved as the framework is revised, with most participants indicating their preference to do so.

Conclusions

Workshop summary

Participants concluded that the confusion around operationalizing the criteria and thus recognizing Fisheries OECMs was both conceptual and practical. However, they noted that a framework detailing the biodiversity outcomes to be expected from fisheries ABMTs, and which provided a step-by-step process to support the evaluation of biodiversity outcomes, would prove instrumental in alleviating some of the practical problems in the recognition of Fisheries OECMs.

Additional takeaway messages from the workshop included:

1) the need to identify who is responsible for gathering the information to evidence a biodiversity outcome at a potential OECM site;

2) the need to incorporate diverse forms of knowledge when evidencing a biodiversity outcome;

3) the need for context specificity whenever assessing biodiversity outcomes related to fisheries ABMTs; and

4) an understanding that while certain parties may have lower capacities than others for evidencing a biodiversity outcome at an OECM site, there must be a minimum standard for fulfilling Criterion C.

Next steps

Plans to continue refining the framework are in place and the content gathered from the IMPAC5 workshop will be incorporated into future drafts. As the framework is refined further it can be used to inform future analyses of fisheries ABMTs and biodiversity outcomes, thus supporting the operationalization of Criterion C and enabling the identification and evaluation of OECMs. What is more, FAO intends to include a review of potential indicators and methods as part of its guidance on Criterion C. This resource will be included alongside the checklist for reference. This framework will hopefully serve as a useful touchstone for future discussions on the contributions of fisheries ABMTs to biodiversity outcomes, thereby supporting ongoing discussion of OECMs in fisheries.

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Annex A: List of participants

Agardy, Tundi
Executive Director
Sound Seas
United States of America

Ahmadia, Gabby
Senior Director of Oceans Conservation Science
World Wildlife Fund, Inc.
United States of America

Appiott, Joe
Coordinator for Marine, Coastal and Island Biodiversity
Convention on Biological Diversity
Canada

Asokan, Anupa
Senior Oceans Advocate
Natural Resources Defense Council
United States of America

Balbar, Arieanna
Doctoral Candidate
Dalhousie University, Department of Oceanography
Canada

Ban, Natalie
Faculty member
University of Victoria, Environmental Studies
Canada

Barrientos, Christian
Mesoamerica Marine Coordinator
Wildlife Conservation Society
Central America

Benblow (Andriamalala), Sophie
Director, Marine
Fauna and Flora International
United Kingdom of Great Britain and Northern Ireland

Bennett, Nathan
Global Oceans Lead Scientist
World Wildlife Fund, Inc.
Canada

Briggs, Johnny
Senior Officer
Pew Charitable Trusts
United Kingdom of Great Britain and Northern Ireland

Brown, Jeanne
Senior Program Manager, Area-Based Conservation
Wildlife Conservation Society
Global

Christie, Patrick
Faculty Member
University of Washington, School of Marine and Environmental Affairs
United States of America

Claudet, Joachim
Senior Researcher
National Centre for Scientific Research (CNRS)
France

Costantini, Marco
Manager, Fisheries – Mediterranean Marine Initiative
World Wildlife Fund Inc.
Italy

Dudas, Sarah
Aquatic Science Biologist III
Fisheries and Oceans Canada
Canada

Grorud-Colvert, Kirsten
Faculty Member
Oregon State University, Department of Integrative Biology
United States of America

Hauptfield, Rina
Research Assistant
Center for Collaborative Conservation
United States of America

Jacquemont, Juliette
Doctoral Candidate
University of Washington, School of Aquatic and Fishery Sciences
United States of America

Kelleher, Jenny
Global OECMs Focal Point
International Union for Conservation of Nature
Switzerland

Kirkegaard, Eskild
Fisheries Management Consultant and Vice-Chair
International Union for Conservation Nature Fisheries Expert Group
Denmark

Kurvinen, Lasse
Senior Specialist, Marine Nature Conservation
Metsähallitus, Parks & Wildlife Finland
Finland

Lansbergen, Paul
President
Fisheries Council of Canada
Canada

Lent, Rebecca
Executive Secretary
International Whaling Commission
United Kingdom of Great Britain and Northern Ireland

Lopez van der Veen, Ivan
Director General
Pesquera Ancora SL
Spain

Loth, Camille
Policy Manager – Mediterranean Marine Initiative
World Wildlife Fund Inc.
France

Lucas, Benjamin
Programme Officer, Nature Conserved
United Nations Environment Programme World Conservation Monitoring Centre
United Kingdom of Great Britain and Northern Ireland

Manopawitr, Petch
Marine Program Manager
Wildlife Conservation Society
Thailand

Morgan, Lance
President and CEO
Marine Conservation Institute
United States of America

Ningtias, Prayekti
Fisheries Policy Specialist
Yayasan Konservasi Alam Nusantara
Indonesia

Obiene, Samson
Researcher, Social Science
Coastal Oceans Research and Development – Indian Ocean (CORDIO) East Africa
Kenya

Ovando, Dan
Senior Quantitative Fisheries Scientist
Inter-American Tropical Tuna Commission
United States of America

Pasquero, Jacopo
International Affairs Advisor
European Bureau for Conservation and Development
Belgium

Pietri, Diana
Senior Social Scientist
Eastern Research Group, Blue Earth Team
United States of America

Pike, Beth
Director
Marine Protection Atlas, Marine Conservation Institute
United States of America

Pons, Maite
Independent fisheries consultant
Uruguay

Roberts, Winnie
Director, Conservation support
Pew Charitable Trusts
United States of America

Sant, Estradivari
Marine Conservation Science Coordinator
World Wildlife Fund, Inc.
Indonesia

Sheehan, Emma
Faculty; Chair
University of Plymouth; Working Group on Marine Protected Areas
United Kingdom of Great Britain and Northern Ireland

Stanley, Ryan
Research Scientist
Fisheries and Oceans Canada
Canada

Sullivan-Stack, Jenna
Postdoctoral Scholar
Oregon State University, Department of Integrative Biology
United States of America

Symons, Despina
Director
European Bureau for Conservation and Development
Belgium

Wenzel, Lauren
Director
NOAA National Marine Protected Area Center
United States of America

Yao, Yue
Project Manager, Conservation Project
Natural Resources Defence Council
China

Organizing committee

Bowser, Lucy
Graduate student
University of Washington, School of Marine and Environmental Affairs
United States of America

Davidson, Sarah
Graduate student
University of Washington, School of Marine and Environmental Affairs
United States of America

Himes-Cornell, Amber
Fishery Officer
Food and Agriculture Organization of the United Nations
Italy

Hoelting, Kristin
Fisheries Management Consultant
Food and Agriculture Organization of the United Nations
United States of America

Nelson-Rowntree, Xavier
University of Washington, School of Marine and Environmental Affairs
United States of America

Annex B: Handout and reference material from IMPAC5 side event workshop: "Participatory Refinement of FAO's draft fisheries ABMT Biodiversity outcomes framework"

Participatory Refinement of FAO's Fisheries ABMT Biodiversity Outcomes Framework

IMPAC5 Side Event: Monday February 6th, 6:00 – 9:00pm

Contact: Amber Himes-Cornell, FAO Fishery Officer (NFI) – Amber.HimesCornell@fao.org

WORKSHOP PURPOSE & OBJECTIVES

There is confusion around when and how area-based management tools (ABMTs) in marine areas may qualify as "other effective area-based conservation measures" (OECMs) and count towards Target 3 of the Kunming-Montreal Global Biodiversity Framework. This confusion stems in part from lack of clarity around the types of biodiversity outcomes that may arise from application of ABMTs by marine sectors, such as fisheries, and lack of consensus around the type and the extent of biodiversity outcomes expected for recognition as an OECM.

Additional guidance is needed to support evaluation of biodiversity outcomes arising from fisheries ABMTs, to support ongoing discussion of OECMs in fisheries. As a supplement to FAO's new Fisheries OECM Handbook, we are developing a draft fisheries ABMT biodiversity outcomes framework consisting of steps to systematically identify how a site's important biodiversity attributes are influenced by a fisheries ABMT, i.e. what specific biodiversity variables characterize the net positive biodiversity outcome? This resource is further envisioned to catalogue diverse indicators and methods useful for understanding and tracking the influence of a fisheries ABMT on distinct biodiversity attributes.

We welcome your contributions at this early stage of conceptualization.

WORKSHOP TIMELINE

6:00–6:35 pm	Welcome and Orientation
6:35–6:50 pm	*Food & Drink Break*
6:50–7:15 pm	World Café Session 1 (25-minute table rotation)
7:20–7:45 pm	World Café Session 2 (25-minute table rotation)
7:45–8:00 pm	*Food & Drink Break*
8:00–8:25 pm	World Café Session 3 (25-minute table rotation)
8:25–9:00 pm	Group Discussion & Closing
OPTIONAL	*Continued socializing until 9:30 pm*

Fisheries ABMT Biodiversity Outcomes Checklist

Framework components for outcome assessment

Step 1: Describe ABMT

Dimensions constrained

- **TIME:** Is the ABMT year-round, seasonal, or rotational? Is it permanent or temporary?
- **ACTIVITIES:** Is there a full or partial closure to fishing?
- **SPACE:** Is the ABMT located in the High Seas and/or an EEZ? Does it impact fishing grounds or broader areas? Are ABMT boundaries static or dynamic?

ABMT context

- What are key threats to the ecosystem within the area?
- What is the overall health of the ecosystem within the area?
- What is the location and size of the area?
- Establishment date and jurisdiction(s)?

Step 2: Essential ocean variables

Important biodiversity attributes

- **SPECIES:** Does the area contain rare/threatened/endangered species; species at vulnerable life stages, etc.?
- **HABITAT:** Does the area contain rare/threatened/endangered habitats; habitats important for ecological representativity or connectivity; habitats important for species life stages or migrations, etc.?
- **COMMUNITY COMPOSITION:** Does the area have high ecological integrity in terms of species composition?

Step 3: Essential biodiversity variables

ABMT influence on species

- Does the ABMT influence species abundance or distribution or population structure by age or size class?
- Does the ABMT influence a species' traits?
- Does the ABMT influence a species' genetic composition?

ABMT influence on habitat

- Does the ABMT influence habitat structure, ecosystem connectivity/fragmentation, composition or functional type?
- Does the ABMT influence larger ecosystem functions, including primary productivity, secondary productivity, nutrient retention, or disturbance regime?

ABMT influence on community composition

- Does the ABMT influence taxonomic diversity of species present in the area?
- Does the ABMT influence a species' interactions within the area?

Step 4: Evidencing outcomes

Forms of evidence

- Are local or traditional knowledge holders available to speak to Step 2 and Step 3? What is their confidence in: a) indicators used by fisheries managers; b) their knowledge of ecosystem health and the ABMT's influence?
- What relevant data and indicators could be used to assess outcomes of the variables identified in Step 3?

Approaches to assessment

- What capacity and resources are available to gather data and engage with knowledge holders?
- Based on evidence available, what methods are feasible to assess outcomes of the variables identified in Step 3?

Refer to the supplement on biodiversity methods and indicators

Step 1: Fisheries ABMTs

Fisheries management employs diverse spatial management measures, or fisheries ABMTs (Table A1), which have the potential to contribute to preserving or enhancing biodiversity. The type and extent of biodiversity outcomes that may arise from a fisheries ABMT will depend on the ABMT's characteristics, including where it occurs (Space Dimension), when it occurs (Time Dimension), and what activities may be restricted (Activities Dimension).

Table A1. Types of fisheries ABMT, and the dimensions most commonly constrained by each

	DIMENSIONS CONSTRAINED									
	TIME				SPACE CLOSED				ACTIVITIES	
	Permanent	Temporary	Seasonal	Real Time	High Seas	EEZ	Fishing grounds	Partial	Total closure	Partial closure
Total gear ban	●				●	●	●		●	●
Zoning	●					●				●
Reserve/Sanctuary	●							●	●	
Territorial use rights in fisheries	●							●		●
Vulnerable marine ecosystem/Benthic protected area	●				●			●	●	●
Fisheries restricted area	●				●					●
Ring fencing	●					●	●			●
Moratorium	●				●	●	●			●
Locally marine managed area/ Community conserved area/ Marine managed areas		●						●		●
Rotational		●				●		●		●
Closed season			●		●	●	●	●		●
Real-time incentive/spatial management				●				●		●
Move-on rule				●	●	●	●	●		●

Source: Rice, J. *et al.* 2018. Other Effective Area-Based Conservation Measures (OEABCMs) Used in Marine Fisheries: A Working Paper. Background Information Document for the CBD Expert Workshop on Marine Protected Areas and Other Effective Area-based Conservation Measures for Achieving Aichi Biodiversity Target 11 in Marine and Coastal Areas, 6–9 February 2018, Montreal, Canada.

Step 2: Essential ocean variables (EOVs)

The Global Ocean Observing System (GOOS) of the Intergovernmental Oceanographic Commission (IOC) of UNESCO is developing a framework of essential ocean variables (EOVs). The EOV framework is intended to support the assessment of status and trends in ocean ecosystem properties. The EOV framework is made up of physical, biogeochemical, biological, and ecological EOVs. The latter two categories – "bio-eco EOVs" – are relevant to understanding marine biodiversity. We are exploring how the EOV framework could support systematic linking of important biodiversity attributes within the area of a fishery ABMT to globally vetted functional group categories. Table A2 provides a recently updated list of bio-eco EOV categories, including emerging categories, such as microbe biomass and diversity, and invertebrate abundance and distribution. Some debate continues regarding species and habitats that should be included in the list.

Table A2. Updated list of EOVs, including biological and ecological ("bio-eco") EOVs

Physics	Biogeochemistry	Biology and ecosystems
• Sea state • Ocean surface stress • Ocean surface heat flux • Sea ice • Sea surface height • Sea surface temp • Subsurface temperature • Surface currents • Subsurface currents • Sea surface salinity • Subsurface salinity	• Oxygen • Inorganic carbon • Transient tracers • Particulate matter • Nutrients • Nitrous oxide • Dissolved organic carbon • Ocean colour • Stable carbon isotopes	• Phytoplankton biomass and density • Zooplankton biomass and diversity • Fish abundance and distribution • Abundance and distribution of marine turtles, birds and mammals • Hard coral cover and composition • Seagrass cover and composition • Mangrove cover and composition • Macroalgal cover and composition • Microbe biomass and diversity (emerging) • Invertebrate abundance and distribution (emerging) • Ocean sound

Source: Bax, N.J. *et al.* 2019. A response to scientific and societal needs for marine biological observations. *Front. Mar. Sci.* 6, 395.

Step 3: Essential biodiversity variables (EBVs)

The Essential Biodiversity Variables (EBV) framework is a project by GEO BON (Group on Earth Observation, Biodiversity Observation Network). As a subgroup of GEO BON, the Marine BON is working to apply the EBV framework in a marine context. We are exploring how the EBV framework could support improved clarity and transparency when discussing biodiversity outcomes arising from fisheries ABMTs. Table A3 provides the latest list of EBV candidate variables, which fall under six overarching EBV classes. A study by Himes-Cornell *et al.* (2022) found that fisheries ABMTs were most frequently linked to biodiversity outcomes under five of these EBV candidates: 1) population abundance, 2) population structure by age/size class, 3) taxonomic diversity, 4) habitat structure, and 5) ecosystem extent and fragmentation.

Table A3. EBV classes and candidate variables

EBV class	EBV candidate
Genetic composition	Co-ancestry, allelic diversity, population genetic diversity, breed/variety diversity
Species populations	Species distribution, population abundance, population structure by age/size class
Species traits	Phenology, body mass, natal dispersion distance, migratory behaviour, demographic traits, physiological traits
Community composition	Taxonomic diversity, species interactions
Ecosystem function	Net primary productivity, secondary productivity, nutrient retention, disturbance regime
Ecosystem structure	Habitat structure, ecosystem extent and fragmentation, ecosystem composition by functional type

Source: ConnectinGEO. 2016. Deliverable D2.2 – EVs current status in different communities and way to move forward. Version 1.0.0. EU Framework Program for Research and Innovation (SC5-18a-2014 - H2020), Project Nr. 641538.

Step 4: A resource for evidencing outcomes

Developing a methods and indicators supplement

The Fisheries ABMT Biodiversity Outcomes Framework is envisioned as a supporting resource following FAO's Fisheries OECM Handbook. It draws together disparate framework components to support clear identification of the specific variables involved in ABMT biodiversity outcomes. In addition, we envision that this resource will catalogue available biodiversity indicators and methods relevant to distinct EBV variables. As a jumping off point for brainstorming, Table 4 provides some preliminary examples of indicators that may be suitable for a selection of EBV variables. We welcome comments on these examples and suggestions of indicators for all EBV variables from Table 3.

Table A4. Example indicators for selected EBV variables, including information about what would constitute a "positive outcome" for each indicator

EBV Variable	Indicator (Examples)	Indicator Definition	Data Collection Methods	Definition of "Positive Outcome"
Population Abundance	**Larval abundance**	The number or quantity of larval organisms of a given species, within plankton samples.	• Plankton samples collected via bongo nets and stored in ethanol	Stable or increased larval abundance of a species indicates maintenance or increase in reproductive activity, or maintained or increased number of adults that have reached reproductive age.
Population Age Structure/ Size Class	**Abundance of certain body lengths (1)**	The number or quantity of organisms at a given length for a population.	• Trawl and net surveys • Visual reef surveys	Increased or maintained diversity of body lengths indicate positive outcomes for population structure by age/size class.
	Abundance of certain body lengths (2)	The number or quantity of organisms at a given length for a population.	• Fisher interviews • Sampling of catches for sale at fish markets.	Increased or maintained diversity of body lengths indicate positive outcomes for population structure by age/size class.
Taxonomic Diversity	**Shannon-Wiener Diversity Index**	**Shannon Wiener Diversity Index (H'):** An estimate of species diversity that considers number of species (richness) and relative abundance (evenness).	• Fish visual rapid census • Fish stationary plot survey • Towed diver	A stable or increasing H' value suggests maintained or improved community structure in terms of species diversity.
Ecosystem Extent/ Fragmentation	**Larval dispersion**	Exchange of larva among marine populations.	• Direct and indirect methods using geochemical and genetic markers • Coupled biophysical models	Maintenance or even increase in larval dispersion supports population connectivity.
Ecosystem Composition/ Functional Type	**Catch mean trophic level (MTL)**	Average trophic level of commercial catch, weighted by biomass of each trophic level.	• Catch data • Fisher observations	Declining MTL (decreased abundance of higher trophic level organisms) is generally interpreted as an indicator of deteriorating trophic structure. NOTE: **catch MTL** has recently come under scrutiny as not tracking with other measures of MTL.
	Ecosystem mean trophic level (MTL)	Average trophic level of fish and invertebrate organisms, weighted by biomass of each trophic level.	• Long-term trawl surveys • Stock assessment	Declining MTL (decreased abundance of higher trophic level organisms) is generally interpreted as an indicator of deteriorating trophic structure.

Source: Author's own elaboration.

Annex C: Criteria and sub-criteria for identification and evaluation of other effective area-based conservation measures

Criterion A: Area is not currently recognized as a protected area	
Not a protected area	• The area is not currently recognized or reported as a protected area or part of a protected area; it may have been established for another function.
Criterion B: Area is governed and managed	
Geographically defined space	• Size and area are described, including in three dimensions where necessary Boundaries are geographically delineated.
Legitimate governance authorities	• Governance has legitimate authority and is appropriate for achieving *in situ* conservation of biodiversity within the area; • Governance by indigenous peoples and local communities is self-identified in accordance with national legislation and applicable international obligations; • Governance reflects the equity considerations adopted in the Convention. • Governance may be by a single authority and/or organization or through collaboration among relevant authorities and provides the ability to address threats collectively.
Managed	• Managed in ways that achieve positive and sustained outcomes for the conservation of biological diversity. • Relevant authorities and stakeholders are identified and involved in management. A management system is in place that contributes to sustaining the *in situ* conservation of biodiversity. • Management is consistent with the ecosystem approach with the ability to adapt to achieve expected biodiversity conservation outcomes, including long-term outcomes, and including the ability to manage a new threat.
Criterion C: Achieves sustained and effective contribution to *in situ* conservation of biodiversity	
Effective	• The area achieves, or is expected to achieve, positive and sustained outcomes for the *in situ* conservation of biodiversity. • Threats, existing or reasonably anticipated ones are addressed effectively by preventing, significantly reducing or eliminating them, and by restoring degraded ecosystems. • Mechanisms, such as policy frameworks and regulations, are in place to recognize and respond to new threats. • To the extent relevant and possible, management inside and outside the other effective area-based conservation measure is integrated.
Sustained over long term	• The other effective area-based conservation measures are in place for the long term or are likely to be. • "Sustained" pertains to the continuity of governance and management and "long term" pertains to the biodiversity outcome.
In situ conservation of biological diversity	• Recognition of other effective area-based conservation measures is expected to include the identification of the range of biodiversity attributes for which the site is considered important (e.g. communities of rare, threatened or endangered species, representative natural ecosystems, range restricted species, key biodiversity areas, areas providing critical ecosystem functions and services, areas for ecological connectivity).

Information and monitoring	• Identification of other effective area-based conservation measures should, to the extent possible, document the known biodiversity attributes, as well as, where relevant, cultural and/or spiritual values, of the area and the governance and management in place as a baseline for assessing effectiveness. • A monitoring system informs management on the effectiveness of measures with respect to biodiversity, including the health of ecosystems. • Processes should be in place to evaluate the effectiveness of governance and management, including with respect to equity. • General data of the area such as boundaries, aim and governance are available information.
Criterion D: Associated ecosystem functions and services and cultural, spiritual, socio-economic and other locally relevant values	
Ecosystem functions and services	• Ecosystem functions and services are supported, including those of importance to indigenous peoples and local communities, for other effective area-based conservation measures concerning their territories, taking into account interactions and trade-offs among ecosystem functions and services, with a view to ensuring positive biodiversity outcomes and equity. • Management to enhance one particular ecosystem function or service does not impact negatively on the sites overall biological diversity.
Cultural, spiritual, socio-economic and other locally relevant values	• Governance and management measures identify, respect and uphold the cultural, spiritual, socioeconomic, and other locally relevant values of the area, where such values exist. • Governance and management measures respect and uphold the knowledge, practices and institutions that are fundamental for the *in situ* conservation of biodiversity.

Source: CBD. 2018. Definition of "other effective area-based conservation measures." Adopted: Conference of the Parties to the Convention on Biological Diversity, 30 November 2018. CBD/COP/DEC/14/8. Montreal. www.cbd.int/doc/decisions/cop-14/cop-14-dec-08-en.pdf

Annex D: Alignment of workshop with the IMPAC5 themes and streams

IMPAC5 Theme / Stream	Relation to fisheries ABMT biodiversity outcomes framework & workshop
Theme: Building a global marine protected area network	Recognition of Fisheries OECMs can complement MPAs to build larger networks of biodiversity protection.
Theme: Advancing conservation in the blue economy	The incentive to identify OECMs creates opportunities to mainstream biodiversity conservation in fisheries management.
Theme: Actively managing marine protected areas and human activity	Recognition of Fisheries OECMs requires active management; this includes active efforts to understand the effects of area-based fisheries management measures, including how they may reduce pressures and threats, and maintain or improve the status and trends of important biodiversity attributes.
Theme: Conserving biodiversity and addressing the climate crisis	Some biodiversity outcomes arising from fisheries ABMTs have been linked to ecosystem resilience.
Theme: Connecting ocean, culture and human well-being	Fisheries OECMs can support the maintenance of links between the ocean, cultures, and the diverse contributions of biodiversity to human well-being. OECM recognition should attend to equity and ecosystem services, including upholding the institutions and values of Indigenous Peoples and local communities.
Stream: Indigenous Peoples Leadership	FAO invited and worked to engage representatives of Indigenous groups in the workshop – and the development of FAO's framework more broadly – to ensure their perspectives and traditional ecological knowledge inform discussions. This is particularly relevant given the focus on Indigenous Peoples and local communities (IPLCs) in Target 3, and the overall Post-2020 Global Biodiversity Framework.
Stream: Voice of Young Professionals	FAO encouraged youth in attendance at IMPAC5 to join this workshop. In addition, the organizational team includes Master's students from the University of Washington, providing them with an opportunity to engage in high-level policy discussions and strengthen leadership skills.
Stream: Innovation and transformational change	The fisheries OECM concept calls for the conservation community to: 1) engage local cultures and politics (by supporting recognition of IPLC's efforts to conserve local biodiversity and support their sustainable use of resources); 2) explore novel institutional and governance arrangements (by encouraging collaborative alliances between fisheries, conservation and other sectoral interests); and 3) embrace new partners and stakeholders and transdisciplinary approaches (by engaging sustainable use sectors in biodiversity conservation in new ways).

The area-based conservation of marine resources is a key aspect of many conservation-focused strategies and actions. Recently, a lot of attention has focused on the concept of "other effective area-based conservation measures" (OECMs), which allow for a variety of sustainable use sectors to contribute to meeting global biodiversity targets through their own area-based management initiatives; this in turn helps countries meet their area-based conservation commitments.

The workshop on the draft biodiversity outcomes framework for Fisheries OECMs was organized by the Food and Agriculture Organization of the United Nations (FAO) to seek the input of experts on the way forward for the identification of Fisheries OECMs. The main points covered during the workshop included: a review of Criterion C for OECMs, as determined by the Convention on Biological Diversity; a compilation and discussion of the main challenges related to the application of Criterion C with initial recommendations on how to address them via the draft framework; and a review of the draft framework components.

The framework is expected to support increased clarity and transparency in identifying biodiversity outcomes, including understanding what positive biodiversity outcomes can be expected to arise from fisheries area-based management tools, thus supporting FAO Members to evaluate fisheries area-based management against OECM criteria.

For more information:
Fisheries and Aquaculture Division
Natural Resources and Sustainable Production Stream
www.fao.org/fishery

Food and Agriculture Organization of the United Nations
Rome, Italy